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Our work.



DS/MS/VA VOLTAGE DETECTOR

D3/LLI LIVE LINE INDICATOR

DISCHARGE EARTHING

MD PROVING UNIT

VOLTAGE BEACON DETECTOR

# P&B Weir Electrical Ltd.

## Voltage Detectors & Equipment

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# Voltage Detectors & Equipment

## PRODUCT RANGE

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### DS/MS/VA VOLTAGE DETECTOR

The Westminster DS/MS/VA voltage detector comprises five main components: contact, extension, adaptor, main body and handles, each rated to suit specific applications which are as follows:

- **Contact** to establish a connection with live conductors, available as either a pointer, mushroom or “Y” type contact to suit specific application.
- **Extension** manufactured and tested to suit the application voltage and provide calibrated capacitance to operate the detector. Available from four types of extension to suit specific voltage ranges, which can be attached in line to the main body or at an angle using an adaptor.
- Two types of **Adaptors** are available, these connect the extension to the main body of the detector. A 90-degree adaptor is available for application where it is preferential to stand directly below the contact point with the extension at the right angle to the main body, allowing a clear view of the application to the conductor/ busbar or when testing inside “spouts”. Alternatively, a 60-degree adaptor is also available for applications where it is preferential to hold the detector at an inclined angle perpendicular to the conductor/ busbar, to improve visibility of the detector.
- **The main body** houses the voltage detector and battery.
- **Handle** provides suitable insulation from the voltage being tested and also provides storage for the main body when not in use. Two types of handle are available to suit the operating voltage.

### PRODUCT BENEFITS

- Robust construction
- Lightweight
- Full ranges of accessories
- Audible and visual warning
- 3.3kV up to 36kV operating ranges
- Fully interchangeable component design
- Insulation tested
- Main body stowage within the insulated handle.

Models Available	
Handle A	Up to 12,000 Volts
Handle B	Up to 36,000 Volts
Extension A	Up to 12,000 Volts
Extension B	Up to 36,000 Volts
Extension C	Up to 3,300 Volts
Extension D	For steelwork only



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## DS/MS/VA TESTER 5-12kV

Voltage detector consisting of 11kV Pointer, Contact Extension 'A', 90-degree elbow, DS/MS/VA main body with audible & visual indication. Please note the image includes optional extras such as daylight shield, 60 degree elbow, Y probe and 11kV mushroom.

**Product Number:** EFV-17006/4



## 11kV 'Y' CONTACT PROBE (3.3kV – 12kV)

For application to small round conductors.

**Material:** Aluminium

**Length:** 25mm

**Part Number:** EMV-17027

## POINTER

For use with DS/MS/VA voltage detector.

Available as 11kV or 33kV type.

**Material:** Aluminium

**Length:** 35mm

**Part Numbers:** EMV-17023 (11kV)  
EMV-17024 (33kV)



## MUSHROOM

Mushroom probe for use with a DS/MS/VA voltage detector. Available as 11kV or 33kV type.

**Material:** Aluminium

**Part Numbers:** EMV-17021 (11kV)  
EMV-17022 (33kV)

# Voltage Detectors & Equipment

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### 60° DEGREE ADAPTOR

For use with all ranges of DS/MS/VA voltage detectors.  
Fitted between the main body and extension.

**Part Number:**

**EAV-17020**



### 90° DEGREE ADAPTER

Fitted between the main body and extension.  
For use with all ranges of DS/MS/VA voltage detectors.

**Part Number:**

**EAV-17019**



### CONTACT EXTENSIONS

For use with all ranges of DS/MS/VA voltage detectors.

Type 'A' 5-12kV

**Part Number:** EFV-17013

Type 'B' 10-36kV

**Part Number:** EFV-17015

Type 'C' 3.3kV

**Part Number:** EFV-17016

Type 'D' Steelwork

**Part Number:** EFV-17017



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### DS/MS/VA Main Body Assembly

Main unit with audible and visual indication, battery-powered. Should one light-emitting diode fail the other will continue to function.

Part Number:

EFV-17004



### HANDLE

Handle for use with DS/MS/VA detector available as 5-12kV or 10-36kV types.

The main body of the unit can be stored within the handle when not in use to offer protection and easy transportation.

Part Numbers: Handle 'A' EFV-17012 (12kV max)

Handle 'B' EFV-17014 (36kV max)

### DAYLIGHT SHIELD

DS/MS/VA daylight shield designed to cover DS/MS/VA LED's to prevent the sun from blocking the view of the operator.

Fitted to the main body to aid visibility of the twin light Emitting Diodes when used in bright lighting conditions.

Part Number:

EFV-17025



### PVC CARRYING BAG

To protect the 10-36kV DS/MS/VA detector and ease transportation on-site this carrying bag is manufactured from reinforced PVC with two bags for either the standard tester with handle A and extension A or for the 10-36kV tester with handle B and Extension B.

Length: 4' 6 Long x 1' 3 High x 6 Thick

Material: Green Coated Nylon

Part Number:

EBB-14510



# Voltage Detectors & Equipment

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### Westminster 12kV BAG

Material: Blue PVC Fabric Re-Inforced  
Dimensions: 710mm Long x 155mm Wide  
(with Velcro fastenings on all flaps).

Part Number: **EBB-17026**



Part Number	Contact	Extension	Adaptor/ Elbow	Main Unit	Handle	Working Voltage
EFV-17005/1	11kV Mushroom	C	60°	Yes	A	3.3kV
EFV-17005/2	11kV Mushroom	C	90°	Yes	A	3.3kV
EFV-17005/3	11kV Pointer	C	60°	Yes	A	3.3kV
EFV-17005/4	11kV Pointer	C	90°	Yes	A	3.3kV
EFV-17006/1	11kV Mushroom	A	60°	Yes	A	5-12kV
EFV-17006/2	11kV Mushroom	A	90°	Yes	A	5-12kV
EFV-17006/3	11kV Pointer	A	60°	Yes	A	5-12kV
EFV-17006/4	11kV Pointer	A	90°	Yes	A	5-12 kV
EFV-17007/1	33kV Mushroom	B	60°	Yes	B	10-36kV
EFV-17007/2	33kV Mushroom	B	90°	Yes	B	10-36kV
EFV-17007/3	33kV Pointer	B	60°	Yes	B	10-36kV
EFV-17007/4	33kV Pointer	B	90°	Yes	B	10-36kV
EFV-17008/1	11kV Mushroom	D	60°	Yes	A	<11kV
EFV-17008/2	11kV Mushroom	D	90°	Yes	A	<11kV
EFV-17008/3	11kV Pointer	D	60°	Yes	A	<11kV
EFV-17008/4	11kV Pointer	D	90°	Yes	A	<11kV
Part Number		Accessory Description		Notes		
EFV-17025		BL Daylight Shield		Fit to the main body for use in bright lighting conditions		
EFV-17009		MD Proving Unit		Battery-powered handheld unit		
EBB-14510 35kV		Carrying Bag		For containing Handle B and Extension B		
EMV-17027		Y Contact		For application to small round conductors		

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### D3/LLI LIVE LINE INDICATOR

The D3/LLI Live Line Indicator is a resistive type voltage detector designed for use on overhead a.c. rail electrification systems operating at 25kV nominal voltage. The 'LLI' threshold is specified as  $12\text{kV} \pm 5\%$ , however, it should be noted that induced voltages could reach 10kV.

The unit is designed to be mounted on approved fibreglass earth poles with the pole immediately below the indicator being the primary insulator (ref EFT-17451 - 0091/012470). The signal emitted by the D3/LLI is both audible and visible. Power is provided by a rechargeable battery, housed within the main unit. The battery can be charged in situ using the charger supplied.

The D3/LLI comprises a main unit and a contact probe. The contact is manufactured from lightweight fibreglass tubing and houses the calibrated resistor stack. The pole section is foam-filled to increase the voltage that it can withstand. The probe is connected to the overhead line by an aluminium hook. The top of the pole is coated in a special high reflectivity paint to ease visibility when applying the indicator in poor lighting conditions and a limiting collar is fitted to demark the limit of any electrified lines. The Earth connecting lead is designed to fuse should the unit be misused by applying the main unit directly to traction current and the cable is housed in a protective jacket to shield the operator.

#### PRODUCT BENEFITS

-  True 12kV + 5% Threshold
-  Audible and visual warning
-  Self-test Function
-  Fully interchangeable
-  Insulation tested
-  Compatible with primary insulator poles

#### D3/LLI LIVE LINE INDICATOR COMPLETE KIT

Kit consisting of Main Unit assembly, Contact Probe assembly, Magnet & Lead Assembly, Battery Charger, Westminster Rail Bag and Rechargeable Battery.

**Part Number:** EFT-17413



#### D3/LLI REPLACEMENT HOOK M/C

Replacement Probe Assembly

**Part Number:** EMT-17417



#### D3/LLI MAIN UNIT

D3/LLI Main Unit, supplied with Magnet and Lead Assembly.

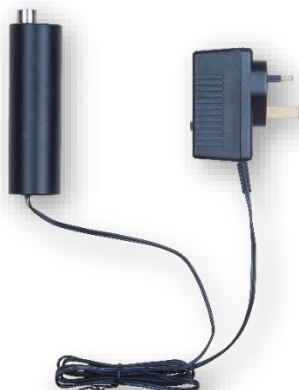
**Part Number:** EAT-17415



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### D3/LLI BATTERY CHARGER

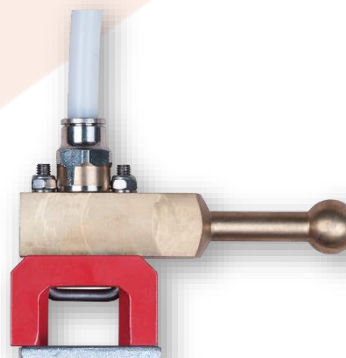
D3/LLI Battery charger for use with nickel-metal hydride PP3 rechargeable battery within the D3/LLI main body.

**Part Number:** EFT-17437

### MAGNET & LEAD ASSEMBLY

Requires factory replacement within Main Unit.

**Part Number:** EAT-17429



### WESTMINSTER RAIL BAG

**Material:** Orange PVC Fabric Reinforced  
**Dimensions:** 1310mm long x 400mm wide  
With Velcro fastening top flap & 25mm webbing shoulder strap.

**Part Number:** EBT-18505

### OTHER PARTS AVAILABLE

Part Number	Product Description
EBT-17405	Replacement Battery (Rechargeable)
EMT-17404	Battery Removal Tool
EAT-17417	Contact Probe
EMT-17433	Magnet (Only)
EFR-18183	Standard Bottom Insulated Pole Section with Rainshield
EFR-18184	Standard Bottom Insulated Pole Selection without Rainshield

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## D3/LLI LIVE LINE INDICATOR PRODUCTS









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### CAPACITOR DISCHARGE RODS

The Westminster Capacitor Discharge Rods are used for the removal of electrostatic charge from disconnected circuits, before undertaking maintenance work.

Manufactured from 1.2 metre-long lightweight insulating tubing and fitted with a dischargeable hook. The connection to earth is facilitated by a 4-metre long earth cable with earthing (crocodile) clip. Models are available with a discharge limiting resistor for use upon capacitors.

#### PRODUCT BENEFIT

-  Robust Construction
-  Lightweight tubing
-  Available with Discharge Limiting Resistor
-  Bonded Handguard Included
-  Insulation Tested
-  Contact Hook Type Fitment

#### PRODUCTS AVAILABLE



##### WDL ER15 CAPACITOR DISCHARGE RODS

Westminster Detectors ER15 earth discharge rod for use up to 15kV.

**Product Number:** EFC-17300

##### WDL ER35 CAPACITOR DISCHARGE RODS

Westminster Detectors ER35 earth discharge rod for use up to 35kV.

**Product Number:** EFC-17301

##### WDL ERR15 CAPACITOR DISCHARGE RODS

Westminster Detectors ERR15 earth discharge rod for use up to 15kV with limiting resistor.

**Product Number:** EFC-17302

##### WDL ERR35 CAPACITOR DISCHARGE RODS

Westminster Detectors ERR35 earth discharge rod for use up to 35kV with limiting resistor.

**Product Number:** EFC-17303

# Voltage Detectors & Equipment

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ALUMINIUM  
CONTACT  
HOOK

4m LONG  
CABLE

SPRING ACTION  
RUGGED EARTH  
CLIP

BONDED HAND  
LIMITING COLLAR

### MD PROVING UNIT

The Westminster MD proving unit is a product designed to test the function of the Beacon and DS/MS/VA detector. This battery-powered portable test unit should be used to test the Voltage Detector before and after being used on-site, to confirm that the Voltage Detector is in working order.

The MD Proving Unit is designed to produce a high voltage output at a high frequency, making the unit safe for operating. The high voltage coil is encased within an epoxy resin shell, which protects the circuitry from contaminants and damage.

#### PRODUCT BENEFITS

-  Simple to use
-  Hand-held
-  Lightweight
-  Compact
-  Warning LED
-  Battery-powered
-  Standard size AA batteries
-  Splash-proof case
-  Protection Rating IP54

#### MD PROVING UNIT

Battery operated handheld unit for use with a DS/MS/VA (suitable for all types) to prove voltage detector functionality before applying to work voltage/ line.

**Product Number:** EFV-17009



### BEACON VOLTAGE DETECTOR

#### OPERATING INSTRUCTIONS









The Westminster Beacon Voltage Detector is a capacitive type voltage detector and is designed for use on a.c. electrified lines. There are two types in the Beacon series, the 5- 12 kV voltage detector and the 10 - 36 kV voltage detector. The thresholds for which are calculated from 10% of the maximum working voltage and 45% of the minimum working voltage.

The Westminster Beacon Voltage Detectors are designed to be used with customers' existing operating sockets and earthing poles, although these can be purchased along with the beacon if required. The testers are colour coded, yellow for the 10- 36 kV and red for the 5- 12 kV for easy identification.

The Westminster Beacon voltage detector must be checked for proper operation before and after use. Press the black ON button, and the green LED will light up and remain illuminated for 5 minutes. The detector cannot be turned off until the cycle has finished. This function prevents the battery from discharging accidentally. Press the TEST button to prove the testers function using the internal test facility.

With both visible and audible indication, the Westminster Beacon voltage detector is designed for indoor and outdoor use. Easy to use and includes a facility for self-checking. For transportation of the device, its contact probe and pole fitting a sturdy case is also provided.

#### PRODUCT BENEFITS

-  Visible and audible detection
-  Suitable for fitting to standard operating pole heads
-  Battery operated (easy change)
-  Rugged construction
-  Twin LED indication
-  Lightweight
-  Easy to use
-  Supplied in a sturdy carry case

#### BUILT-IN TEST FUNCTION

A test function is built-in to prove the Beacon Voltage detector circuitry before and after use. When the detector is switched on it will illuminate the green 'stand by' state LED. The green stand by state LED will be extinguished by pressing the black test button and replaced with the red LED followed by a continuous audible sound signal. When the test button is released the indicator should return to the green standby state.

Specification	Voltage Operating Range	Threshold Voltage	Product Number
<ul style="list-style-type: none"><li>• BS EN 16243.1</li><li>• EN 61326-1</li><li>• CIS PR11</li><li>• IEC 61000-4-2</li></ul>	• 5- 12kV	• 1.2- 2.25kV	• EFV-17200
	• 10-36kV	• 3.6- 4.5kV	• EFV-17201
European Design Registration Number		001170591-0001	



# Voltage Detectors & Equipment

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## BEACON 10-36kV (YELLOW) VOLTAGE DETECTOR

Voltage Operating Range: 10- 36kV

Threshold Voltage: 3.6- 4.5kV

Part Number: EFV-17201



## BEACON 5-12kV (RED) VOLTAGE DETECTOR

Voltage Operating Range: 5- 12kV

Threshold Voltage: 1.2- 2.25kV

Part Number: EAV-17200



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